

In re Patent Application of:

ROSSIN ET AL.

Serial No. **09/518, 421**

Filed: **MARCH 03, 2000**

A1
far field beam profile at increased output power, and more specifically the lack of beam steering, is further evidence that there was no oscillation of the first order lateral mode, even for the highest power levels.

In the Claims:

Please amend the claims as follows:

K2
1. (Amended) A light source, comprising:

a semiconductor laser including a laterally confining optical waveguide having a reflecting first end and a second end, the optical waveguide having a first portion of a first width extending a first distance from the first end and a second portion of a second width, less than five microns, wider than said first width and extending a second distance from the second end, and a third portion extending from said first portion to said second portion and having a width that tapers from said first width of said first portion to said second width of said second portion; and

wherein the first portion filters lateral optical modes higher than a fundamental lateral optical mode, and an output is emitted from the second end of the optical waveguide, such that a far field beam profile of said output emitted from the second end of the optical waveguide has a peak at 0°, and a respective slope of said far field beam profile on either side of said peak

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12
has a polarity that remains constant with increase in divergence angle.

13
17. (Amended) A fiber optic system, comprising:

a communications fiber having a first end and a second end, the communications fiber including an excitable fiber medium; and

a pump laser coupled to supply pump light to the excitable fiber medium, the pump laser including a laterally confining optical waveguide having a first end of a first width provided with a high reflector, and a second end of a second width, the optical waveguide having a first portion of said first width and extending a first distance from the first end and a second portion of said second width, less than five microns, and wider than said first width, and extending a second distance from the second end, and a third portion extending from said first portion to said second portion and having a width that tapers from said first width of said first portion to said second width of said second portion; and

wherein, the first portion filters out lateral optical modes higher than a fundamental lateral optical mode, and an output is emitted from the second end of the optical waveguide, such that a far field beam profile of said output emitted from the second end of the optical waveguide has a peak at 0°, and a respective slope of said far field beam profile on either side

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X3
of said peak has a polarity that remains constant with increase in divergence angle.

X4 — 32. The light source according to claim 1, wherein said first width is on the order of 2.3 microns and said second width is on the order of 4.3 microns.

— 33. The system according to claim 17, wherein said first width is on the order of 2.3 microns and said second width is on the order of 4.3 microns.
